

KNN2/KNN (Q9L10)

63% (12/19)

- ✓ 1. KNN is
- ☒ A data-driven method
 - ☐ B model-driven method
 - ☐ C I do not know
- ✓ 2. The dependent variable of the classification is
- ☒ A categorical
 - ☐ B numeric
 - ☐ C I do not know
- ✓ 3. KNN can be used for regression
- ☒ A Yes
 - ☐ B No
 - ☐ C I do not know
- ✗ 4. In the case of KNN classification we use
- ☒ A average of outcomes
 - ☐ B majority voting scheme
 - ☐ C I do not know
- ✓ 5. Which of these errors will increase constantly by increasing k?
- ☒ A train error
 - ☐ B test error
 - ☐ C both
 - ☐ D I do not know
- ✗ 6. This function can be used to perform KNN classification in R
- ☐ A knn()
 - ☐ B k_nn()
 - ☒ C knnreg()
 - ☐ D knearneib()
 - ☐ E I do not know

- ✗ 7. With the increase of k , the decision boundary will be
- ☐ A simplified
 - ☒ B more complex
 - ☐ C I do not know
 - ☐ D unchanged
- ✓ 8. KNN algorithm is sensitive to outliers
- ☒ A True
 - ☐ B False
 - ☐ C I do not know
- ✓ 9. KNN
- ☒ A is a supervised learning algorithm.
 - ☐ B is an unsupervised learning algorithm.
 - ☐ C I do not know
- ✓ 10. In the case of small k we have
- ☒ A overfitting
 - ☐ B underfitting
 - ☐ C it depends on the situation
 - ☐ D I do not know
- ✓ 11. Why do we need scaling in KNN?
- ☐ A to avoid overfitting
 - ☐ B to avoid underfitting
 - ☒ C to have "equal" weights for variables
 - ☐ D I do not know
- ✓ 12. Let $k = n$, (n - number of observations), K-NN is same as
- ☐ A random guessing
 - ☒ B everything will be classified as the most probable class (in total)
 - ☐ C everything will be classified as the least probable class (in total)
 - ☐ D I do not know

- ✓ 13. This function can be used to perform K-NN regression in R
- ☒ A knn.reg
 - ☐ B knnforreg
 - ☐ C regknn
 - ☐ D knnforregression
 - ☐ E I do not know
- ✓ 14. Do you need to worry about scaling with one explanatory variable?
- ☒ A No
 - ☐ B Yes
 - ☐ C I do not know
- ✓ 15. n - the number of observation,
 m - the number of explanatory variables

When $n=k$, $m=1$, the decision boundary for regression is

- ☒ A a line
 - ☐ B a stepwise constant function
 - ☐ C a stepwise quadratic function
 - ☐ D I do not know
- ✗ 16. Which of these algorithms can be used to fill the missing values
- ☒ A KNN for regression
 - ☐ B KNN for classification
 - ☐ C both
 - ☐ D I do not know
- ✗ 17. Which one is better: KNN regression or Linear regression?
- ☐ A KNN outperform LR if the parametric form that has been selected is close to the true form of f
 - ☐ B LR outperform KNN if the parametric form that has been selected is close to the true form of f
 - ☒ C KNN will always outperform the LR
 - ☐ D I do not know

✗ 18. Which one is the Disadvantage of KNN?

- ☐ A required assumptions
- ☐ B cannot be applied for regression
- ☒ C difficult to perform
- ☐ D the problem of high dimensional data
- ☐ E I do not know

✗ 19. The best k for train set equals to

- ☐ A 1
- ☐ B 2
- ☐ C 0
- ☒ D I do not know

⊘ 20. What is the Parzen window